Technical Specification

ISO/TS 19858

Second edition
2024-01

Forestry machines — Portable chain-saws — Test method for evaluating saw chain lubricity

Machines forestières — Tronçonneuses portables — Méthode d'essai pour l'évaluation de la capacité de lubrification de la chaîne de la scie

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 17, *Manually portable (hand-held) powered lawn and garden equipment and forest machinery*.

This second edition cancels and replaces the first edition (ISO/TS 19858:2015), which has been technically revised.

The main changes are as follows:

— specifying a sampling rate for temperature measurement;

— adaptation of the cutting set to products available on the market;

— adaptation of the measuring distance;

— correction of the standard for viscosity measurement;

— improvement of image quality.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The test procedures given in this document create a reproducible replication of the stress conditions experienced by the saw chain and guide bar during sawing. The test shows the capacity of the lubricant for reducing the wear between friction partners.

This enables the manufacturers of chain-saws to include specifications for recommended saw chain lubricant in the owner's manual.

The test rig is based on a design produced by the Swedish test commission Svensk Maskinprovning (SMP). The test procedures also take into account the long-term practical experience of the Kuratorium für Waldarbeit und Forsttechnik e.V. (KWF) in testing bio-degradable chain lubricant.

Forestry machines — Portable chain-saws — Test method for evaluating saw chain lubricity

1 Scope

This document defines test procedures for classifying the lubrication ability of saw chain lubricant when using guide bar and saw chain.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2049, *Petroleum products — Determination of colour (ASTM scale)*

ISO 2909, *Petroleum products — Calculation of viscosity index from kinematic viscosity*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
chain without teeth
<saw>chain where the cutting links are replaced by links without teeth or bumpers

3.2
loading wheel
rubber coated wheel that applies the contact load to the chain from below

Note 1 to entry: See Figure 1.

4 Test rig

4.1 General

The test rig is designed so that the chain is driven by the rim sprocket. The chain speed is adjusted by controlling the output speed of the motor driving the sprocket. See Figure 1.

4.2 Major components

The major components include the following:

a) power source and a connecting device that transfers rotational energy to the cutting attachment;

b) means of attachment for the cutting attachment;